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Mediawatch

Peerless review?

Bernard Dixon

All research journals like to make an impact in the news media, but preferably for publishing research that is reliable as well as newsworthy. When the *Lancet* recently blurred the distinction between the two, the press sensed a good story, even in advance. "The scientist who suggested that genetically modified foods could damage health — and was comprehensively rubbished by government ministers and the scientific establishment — is to have his reputation dramatically vindicated," wrote the *Independent on Sunday*'s environment correspondent on 3 October. The headline, "Smeared GM expert vindicated", was echoed next day by the *Express*'s front-page screamer: "VINDICATED."

The articles were occasioned by the imminent publication of a paper which apparently confirmed claims that rats given a genetically modified (GM) food showed impairments in growth and immune responsiveness. The allegations were originally aired more than a year ago in a BBC Television *World in Action* programme featuring Arpad Pusztai, then of the Rowett Research Institute in Aberdeen, Scotland (see *Curr Biol* 1998, **8:**R630). Since then there has been endless speculation in the press about the data.

When the paper did surface, in the *Lancet* (1999, **354:**1353) on 16 October, it reported "variable effects" in the small intestine of rats fed raw potatoes expressing a snowdrop lectin. Authored by Pusztai and Stanley Ewen, it did not describe the effects claimed on *World in Action*. As the journal's editor Richard Horton confirmed in an accompanying Commentary, publication of Ewen and Pusztai's findings was not a "vindication" of Pustzai's earlier claims. In addition, the data were "preliminary and non-generalisable."

Yet even before their appearance, the data were surrounded by renewed controversy, centred on the journal's decision to go ahead despite opposition from reviewers. "Research purporting to show that rats suffer ill-health when fed GM potatoes has been judged as seriously flawed and unworthy of being published in a peer-reviewed scientific journal," wrote Steve Connor, science editor of the *Independent*.

Among other critics, he cited John Pickett, who had refereed the paper and become so outraged that he had decided to voice his concerns publicly. "It is a very sad day when a very distinguished journal… sees fit to go against senior reviewers," he said. Another, anonymous, reviewer was quoted as stating that the paper's conclusions were "wild speculation" unsupported by data. On publication day the *Independent* ran another report under the headline "It is Britain's pre-eminent medical journal. Now its reputation hangs on a single issue."

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Richard Horton's principal answer to these criticisms was the need, after a year of debate and uncertainty, for the claims to be placed in the public domain. He cited one referee who, while arguing that the data were "flawed", said they should be published so that other scientists could judge for themselves. "If the paper is not published," this reviewer said, "it will be claimed there is a conspiracy to suppress information."

In reaching what was undoubtedly a difficult judgement, Horton might have considered another occasion when a major learned journal reached an editorial decision in defiance of peer review. Twenty five years ago *Nature* (1974, **251:**602) published a paper by Russell Targ and Harold Puthoff of Stanford Research Institute, Menlo Park, California, which purported to show that Uri Geller, located in an electrically shielded room, could reproduce target pictures drawn by experimenters at remote locations.

The paper was accompanied by an editorial, based on referees' reports, stating that the paper was weak in design and execution, with "disconcertingly vague" experimental details and "uncomfortably vague" precautions against erroneous conclusions being drawn. Although these were grounds for rejection, the editorial said, *Nature* had gone ahead because publication of the data, following previous controversy and publicity, would allow other scientists to make up their own minds about the quality of the work.

The danger in this approach was that believers in Geller's paranormal skills, and some journalists, would interpret acceptance of the paper by the world's premier scientific journal as authentication of his abilities. The accompanying editorial would be swiftly forgotten. So it proved. The *Observer*'s immediate "Geller gets science's seal of approval" was the first of many media references over the past 25 years to Geller's vindication by scientific orthodoxy.

It remains possible that this will not happen in the present case. On the contrary, discussion of the peer review process in the *Independent*, the *Daily Telegraph* and elsewhere may have had the beneficial effect of highlighting the importance of critical evaluation before scientific findings can be accepted with confidence. Much more likely is that the episode has reinforced a disquieting misbelief which has characterized virtually all media coverage of GM food. This is that evidence (good or bad) about dangers associated with one specific transgenic plant or plant product condemns everything qualifying for the now odious epithet 'GM'.

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